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# Photographing Barnswallows in Free Flight

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If anyone might say that I have a photographic passion it is that of trying to make a "perfect" photograph of something or another. It is my belief that even though many themes and subjects have been tackled successfully in the past, there is often room for improvement. And, although my photographs may not reach the perfection of those made by other authors, I gain personal experience and the satisfaction of at least having tried and learned in the process.

One topic that has fascinated me is the making of photographs of birds in flight. For my attempts I decided to make life simple for myself, at least in the beginning, by concentrating on birds that exhibit a fairly predictable behavior. This is a characteristic of most bird species when they are rearing their young as the parent birds deliver food to the chicks on a regular basis. while these are still in the nest



I have found barnswallows particularly easy to locate and photograph. The problems encountered in this kind of photography are primarily connected with automating the instant, and thereby the location of the parent bird, at which the photograph is made.

Because they fly so fast trying to make the photographs by manually tripping the camera's shutter most often leads to frustration and disappointment. Human reaction time is much too slow to ensure that the birds are within the image frame and at the focus point of the camera at the time the shutter operates.

To make the photographs on a more predictable basis I devised a "Dark Activated Synchronizer". While there are commercial units available but they are rather too expensive for my pocketbook. The Kapture Group sells a commercial unit. This type of synchronizer closes a switch when a light beam aimed at its photocell is interrupted. It behaves in a manner reminiscent of people counters or alarms in stores.

The dark activated switch is used to control the shutter of a camera in a camera that has provision for remotely triggering its shutter by the mere act of completing a circuit. Many camera models have this capability but one of the simplest is the one available for the old Canon A1 and AE-1 Program manual cameras.

The synchronizer is based on a 556 timer IC device with a few odd and ends thrown in. The cost of the whole device is about \$40-25 or less depending on the quality of the items purchased. I have the schematic of the circuit available and would be happy to share it

with anyone interested. Just drop me an email at the address below. You can also see a rudimentary version of it at the following website: <http://www.rit.edu/~andpph/text-cross-beam.txt>



I installed the synchronizer on the rafters of my barn along with my Canon A1 camera fitted with a Canon A2 winder (it has the switch to remotely activate the shutter built in!) and the lens I generally used was a 100mm Canon f/3.5 lens. The film I used was Kodak Ektachrome Plus which I purchased in bulk and reloaded to to 36 exposure rolls. I was planning to go through a lot of film!

I located a small, laser diode type, pointer rewired so I could run it off a transformer that provided the low voltage needed off house current. The laser beam was aimed at the synchronizer's photocell from such a location that the birds would often fly through the beam on their way up to the nest. Ambient light was largely excluded from the synchronizer's sensor by careful shielding around its photocell so that it was mostly the laser beam that hit the sensor surface.

The camera was set on 1/60 second (X sync speed) and a Sunpak 611, with power level lowered to 1/16th power was connected to the camera. The lowered power level accomplished two things. It provided a short, action stopping, exposure time and also did not blind the birds during the last fraction of a second before making a landing on the nest.



The whole system was checked out by making a few passes with a broomstick through the beam. This caused the camera to trip and the flash

to go off each time the handle was passed through the beam. At this point it was time to leave the set-up alone and go for coffee or dinner before returning to the barn and checking whether the film counter had advanced in the interim. If it had this was an indication that photographs had been taken and it was now an exciting wait until the films were processed to evaluate the angle from which the photographs were taken, the choice of aperture and lighting and other factors that then go into making a photograph that is not only successful at a technical level but also an aesthetic one.

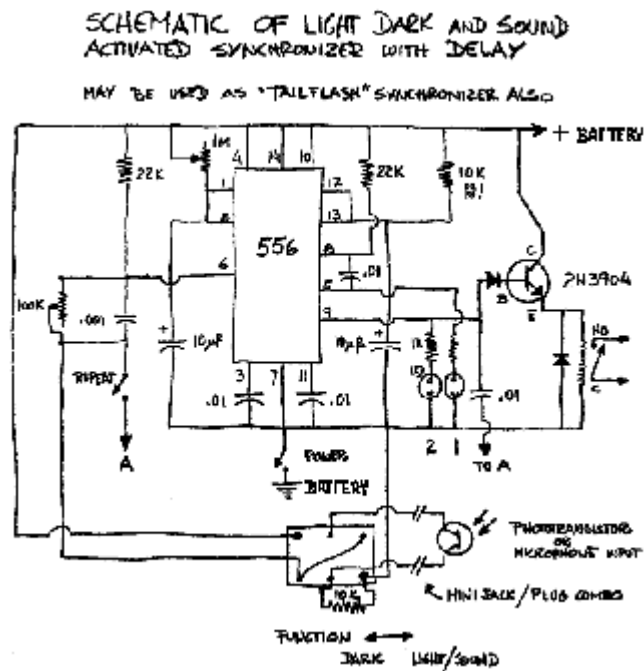
I hope you will agree that even though these may not be the best barnswallows-in-flight photos you have ever seen that they, nevertheless, convey something about the photographic process and the birds themselves that is not often seen in the literature.

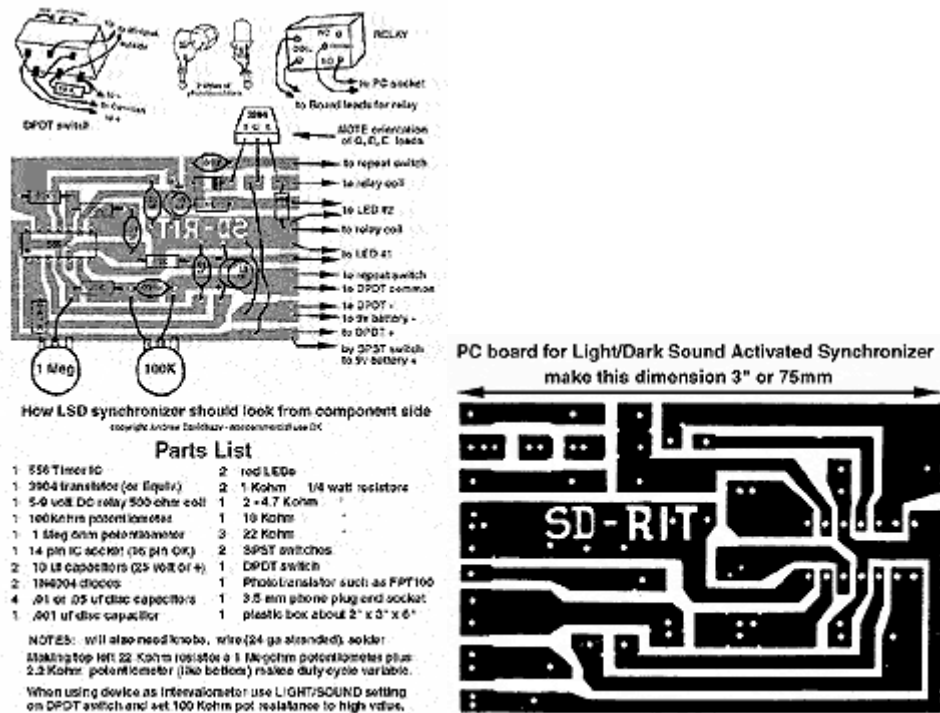
Thanks,  
Andy Davidhazy

PS: Below is the schematic, PC board, parts list and rudimentary instructions of the Dark activated Synchronizer that I used for this project. It actually also works in "Light Activate" mode and can also be turned into an intervalometer.

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Schematic, Component Layout and PC board of  
Light/Dark and Sound activated synchronizer  
with adjustable delay (analog) and Intervalometer setting  
(c) A.Davidhazy \* non-commercial use and distribution ok!





**Attempt to build at own initiative and risk.  
 No guarantee you will succeed or that it will work for you.  
 Rudimentary Troubleshooting Instructions below:**

A student who built one of these asked: Now, if I'm looking at the box, with the three switches on the top (on/off switch on the left), what do the switches and knobs do again? I got it to work once, but then I started playing around, and messed it all up.

Unfortunately unless I know which "pot" is which and which switch is connected to what it is kind of hard to tell you what these things (on your box layout) do. However, .... there should be

1. one ON/OFF switch
2. one REPEAT switch (it makes the device "cycle" over and over once the process has been started.
3. one Two position switch that selects whether the device responds to light or darkness.
4. one "sensitivity" knob or potentiometer

5. one delay timer potentiometer.

Anyway, what I would do is first is to try to identify the ON/OFF switch. Make sure you do NOT have the light sensor plugged into the unit. Then the other ones are the repeat switch or the synch selector switch.

To decide which is which start out however they are set now. Turn both "knobs" fully counterclockwise. Then note if one of the led's comes on or not. Also note whether the device starts "cycling" or whether one of the led's remains lit for a long time. If so, then turn the knobs, one at a time, and see if you can make the cycling time change. The knob that causes the timing to change is the "time delay" knob. Label it. The other one is the sensitivity knob. Label it.

If the above does NOT happen, then keeping the switches where they were turn the knobs fully clockwise. One or both led's should turn on now. If so proceed as above. If not then change the position of the two switches and repeat above procedures.

Turn the knobs back and forth. This should cause one of the led's to turn on and then off. That knob controls the sensitivity. Label it as "sensitivity". And label the direction in which you turn it that causes the led to turn on, the "high" side.

The switch setting where the turning of that knob causes one led to turn on and off is the setting for "dark" activation of that switch. Label it, one side "dark sync" and the other "light sync". The other position of the switch is "light" activation. (Although you will not be able to detect "light" because I have told you to do all this with the light detecting device unplugged).

So, by now you will have labeled ON/OFF, repeat ON/OFF, light and dark sync, delay timer and sensitivity. A total of 5 items will have been labeled by a process of elimination.

If you still have problems you can contact me here: [andpph@rit.edu](mailto:andpph@rit.edu) and I will try to provide assistance.

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The Wave Sensor, is a multifaceted synchronizer made by LPA Design and includes delay capability as well light, sound and dark activation ... much like the device described above but digital and probably much more reliable! You can get it from: <http://www.lpadesign.com/>

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The Kapture Group makes a very sophisticated sync system including detectors, synchronizers and delay timers, etc. Find them at: [http://www.kapturegroup.com/kap\\_htmls/laser.html](http://www.kapturegroup.com/kap_htmls/laser.html)

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You can also obtain similar devices starting with the Shutter Beam from:

Woods Electronics  
c/o Steve Yankey  
619-486-0806

Web: [Woods Electronics](#)- Sound and IR activated synchronizers

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PS: Drop me an email if you found this little story interesting! (andpph@rit.edu)